



ATTORNEY DOCKET NO.: KCX-436B (K-C 16659.B)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

In re Application of: Tong Sun, et al.	)	Examiner: Elizabeth M. Cole
	)	
Serial No.: 10/022,823	)	Group Art Unit: 3629
	)	
Filed: December 18, 2001	)	Our Customer ID: 22827
	)	
Confirmation No.: 3789	)	Our Account No.: 04-1403
	)	
For: Polyvinylamine Treatments To Improve	)	
Dyeing Of Cellulosic Materials	)	

**APPEAL BRIEF**

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
Post Office Box 1450  
Alexandria, VA 22313-1450

Honorable Commissioner:

Appellants submit the following brief on appeal in accordance with 37 C.F.R. §  
41.37:

**1. REAL PARTY IN INTEREST:**

The real party in interest in this matter is the assignee of record, Kimberly-Clark  
Worldwide, Inc.

**2. RELATED APPEALS AND INTERFERENCES:**

There are no other appeals or interferences known to the Appellants or the  
Appellants' legal representative which will directly affect or be directly affected by or  
have a bearing on the Board's decision in the pending appeal.

### **3. STATUS OF CLAIMS:**

Claims 16-28 and 32 are currently pending in the present application, including independent claim 16. All the claims are attached hereto as Exhibit A.

### **4. STATUS OF AMENDMENTS:**

The Appellants' Request For Reconsideration filed on September 24, 2004, was not entered into the record. However, no amendments were made in the Request For Reconsideration.

### **5. SUMMARY OF CLAIMED SUBJECT MATTER:**

The currently pending claims are directed to a dyed textile material that has been treated with a polyvinylamine and a complexing agent. As stated in the specification, the present inventors have discovered that the combination of the polyvinylamine polymer and the complexing agent, when applied to the textile material can increase the affinity of the material for various dyes, particularly acid dyes. Application, Page 5, ll. 1-10. The complexing agent can be a polymeric anionic reactive compound, a polymeric aldehyde functional compound, a glyoxylated polyacrylamide, an anionic surfactant, or mixtures thereof. Application, Page 4, ll. 14-20.

For instance, independent claim 16 is directed to a dyed textile material containing a cellulosic material. The cellulosic material has been treated with a polyvinylamine and a complexing agent. The complexing agent serves to bond the polyvinylamine to the cellulosic material. As defined in claim 16, the dyed textile material further comprises an acid dye applied to the cellulosic material.

## **6. GROUND OF REJECTION TO BE REVIEWED ON APPEAL:**

In the Final Office Action dated June 22, 2004, the Examiner provisionally rejected claims 16-18 and 32 under the judicially created Doctrine of Obviousness-Type Double Patenting as being unpatentable over claims 1-45 of the pending Application No. 10/023,489.

Also, in the Final Office Action, the Examiner rejected claims 16-18, 20-23, 26-28 and 32 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,529,585 issued to Schrell, et al. (hereinafter "Schrell") in view of U.S. Patent No. 4,242,408 issued to Evani (hereinafter "Evani").

Claims 24-25 were rejected under 35 U.S.C. § 103 as being unpatentable over Schrell in view of Evani and further in view of JP 02-127,593 (hereinafter JP '593).

Claims 16-17, 19-20, 22-23, 26-28, and 32 were rejected under 35 U.S.C. § 103 as being unpatentable over Schrell in view of WO 00/11046 issued to Geer, et al. (hereinafter "Geer").

Claims 24-25 were rejected under 35 U.S.C. § 103 as being unpatentable over Schrell in view of Geer and in further view of JP '593.

## **7. ARGUMENT:**

Appellants previously agreed to submit a terminal disclaimer, if it becomes necessary, to overcome the provisional double patenting rejection for claims 16-18 and 32.

- I. All of the presently pending claims are patentably distinct over Schrell in view of either Evani or Geer.**

Schrell discloses adding polymeric amine compounds to a solution of cellulose from which viscose fibers are regenerated. As admitted in the Office Action, Schrell does not disclose, teach, or suggest employing the use of a complexing agent. Furthermore, Schrell does not teach bonding the polymeric amine compound to the fiber, as required by independent claim 16. Instead, Schrell teaches incorporating the polymeric amine compound into a fiber solution when the solution is spun.

Evani is directed to a non-woven web and simply discloses the use of a pH sensitive binder that is intended to provide the web with adequate wet strength but also allows the web to readily disintegrate in an environment at a higher pH. The binder is described as an interpolymer of at least one ethylenically unsaturated carboxylic acid and at least one ethylenically unsaturated water-insoluble monomer.

Geer is similar to Evani in that the disclosure is directed to improving the strength of paper. Specifically, Geer discloses preparing a polymer by reacting dialdehydes with anionic and amphoteric polyacrylamides and making paper with the polymer. Also disclosed is making paper with the polymer in combination with a cationic adjunct.

Neither Evani nor Geer is directed toward the receptivity of cellulosic materials for acid dyes.

**A. Schrell teaches away from the treating of the cellulosic fiber textiles before dyeing.**

The Federal Circuit has several times expressly addressed the issue of how to evaluate an alleged case of prima facie obviousness to determine whether it has been properly made. For instance, "a prima facie case of obviousness can be rebutted if the applicant can show that the art in any material respect taught away from the claimed

invention.” *In re Haruna*, 249 F.3d 1327,1335 (Fed. Cir. 2001), citing *In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997).

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Furthermore, a “prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” M.P.E.P. 8th Ed., Rev. 2, §2141.02, citing *W.L. Gore & Associates v Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983).

In the present case, Schrell teaches away from treating the cellulose fiber textiles before dyeing. Specifically, Schrell teaches that other patents “describe various amino-containing compounds for pretreating the surface of cellulose fiber textiles before dyeing. The disadvantage of such processes is an additional process step and the yellowing of the fabric.” Col. 1, ll. 41-46. Instead, Schrell teaches admixture of the polymeric amine compound to avoid any such pretreating steps. Col. 1, ll. 47-57.

Thus, the disclosure of Schrell leads one of ordinary skill in the art away from treating cellulose fiber textiles with any compounds before dyeing. In stark contrast, independent claim 16 requires that the cellulosic material be treated with a polyvinyl amine and a complexing agent. The complexing agent serves to bond the polyvinyl amine to the cellulosic material.

As such, Appellants respectfully submit that Schrell teaches away from the claimed invention, and a *prima facie* case of obviousness, therefore, cannot be established.

**B. No motivation, suggestion, or incentive exists in the in Schrell to employ an additional compound to bond the polyvinylamine and the cellulosic material.**

Obviousness may only be established by modifying the teachings of the prior art to produce the claimed invention if there is some teaching, suggestion, or motivation to do so found either in the reference itself or in the knowledge generally available to one of ordinary skill in the art. See e.g., *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992).

Accordingly, even if all elements of a claim are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill would have been prompted to modify the teachings of the references to arrive at the claimed invention. See e.g., *In re Regel*, 188 U.S.P.Q. 132 (C.C.P.A. 1975). Where no reasonable intrinsic or extrinsic justification exists for the proposed modification, a case of *prima facie* obviousness will not have been established.

In the present case, one of ordinary skill in the art, upon reading Schrell, would not be motivated to employ the use of an additional compound, such as a complexing agent, to bond the polyvinylamine to the cellulosic material, as required by claim 16. In fact, as discussed above, Schrell teaches expressly away from adding any other processing step or compound to the disclosure.

The polymeric amine compound of Schrell becomes incorporated into the regenerated cellulose fibers by being added during the formation of the fibers. There is no motivational suggestion within Schrell to lead one of ordinary skill in the art to look

for a compound serving to further bond the polymeric amine compound of Schrell to the cellulose fibers.

On the other hand, the presently pending claims require the use of a complexing agent, in addition to the polyvinylamine and the cellulosic material. The complexing agent serves to bond the polyvinylamine to the cellulosic material. According to the present specification, and not wishing to be bound by theory, it is believed that a complexing agent once contacting a cellulose fiber will bind to the fiber. Once the complexing agent is bound to the fiber, it is believed that the complexing agent can facilitate the formation of a covalent bond between the polyvinylamine and the fiber. The polyvinylamine provides dye sites for the acid dye. Application, Pgs. 41-42, Il. 25-2.

Appellants submit that there exists no motivation in Schrell to include a complexing agent to further bond a polyvinylamine to cellulosic material when Schrell already teaches incorporating a polymeric amine compound into a solution of cellulose.

**II. Claims 16-18, 20-23, 26-28, and 32 are patentable because no motivation, incentive, or suggestion exists to combine Schrell and Evani as suggested by the Office Action.**

In order to somehow compensate for the above noted deficiencies of Schrell, Schrell was cited in combination with Evani. Evani is directed to a non-woven web and simply discloses the use of a pH sensitive binder that is intended to provide the web with adequate wet strength but also makes the web readily disintegrate in an environment at a higher pH. The binder is described as an interpolymer of at least one ethylenically unsaturated carboxylic acid and at least one ethylenically unsaturated water-insoluble monomer.

As opposed to Schrell, however, Evani does not disclose the use of a polyvinylamine to facilitate the receptivity of cellulosic material to certain dyes, such as acid dyes. In fact, Evani is not even related or relevant to applying acid dyes to cellulosic materials. Instead, as described above, Evani is directed to the construction of premoistened tissues that are dispersible when placed in a flushable facility. Further, Evani is in no way directed to the problem solved by the present invention, which is generally the ability to apply an acid dye to a cellulosic material. In fact, nowhere does Evani even mention the use of acid dyes.

Thus, Evani cannot be read to providing motivation or incentive for adding a complexing agent to serve to bond a polyvinylamine to cellulosic material in order to improve the acid receptivity of acid dyes of textile material.

As such, Appellants respectfully submit that no motivation, suggestion, or incentive exists for one of ordinary skill in the art to combine the teachings of Schrell and Evani as suggested by the Office Action. Appellants submit that it is purely impermissible hindsight to somehow suggest that one skilled in the art would have been motivated to add the pH sensitive binder disclosed in Evani into the fiber spinning solution disclosed in Schrell.

Appellants emphasize that the teachings of the references must be viewed in their entirety, i.e., as a whole, to sustain a prima facie case of obviousness under 35 U.S.C. §103(a). Further, the appropriate test under 35 U.S.C. §103(a) is not whether the differences between the prior art and the claims are obvious, but instead whether the claimed invention as a whole would have been obvious. That is, the differences between a particular claim and the cited references cannot be viewed in a vacuum. In



this case, Appellants respectfully submit that, when properly viewed as a whole, there is simply no motivation to combine the references in the manner suggested in an attempt to render obvious the present claims.

**III. Claims 16-17, 19-20, 22-23, 26-28, and 32 are patentable because no motivation, incentive, or suggestion exists to combine Schrell and Geer as suggested by the Office Action.**

As stated above, Schrell teaches away from treating cellulose fibers before dyeing. Furthermore, Schrell does not teach the use of a complexing agent in addition to the polymeric amine compound. In order to somehow overcome the deficiencies of Schrell, the Office Action combines the teachings of Geer to the teachings of Schrell.

Geer is similar to Evani in that the disclosure is directed to improving the strength of paper. Specifically, Geer discloses preparing a polymer by reacting dialdehydes with anionic and amphoteric polyacrylamides and making paper with the polymer. Also disclosed is making paper with the polymer in combination with a cationic adjunct.

Similar to Evani, Geer does not disclose, suggest, or have any relevance to solving the problem of improving acid dye receptivity to a textile material containing a cellulosic material. Further, no motivation, suggestion or incentive exists for somehow modifying Schrell in order to incorporate a complexing agent with a polyvinylamine wherein the complexing agent serves to bond the polyvinylamine to cellulosic material for increasing the acid dye receptivity of a textile material.

Thus, Geer, like Evani, cannot be read for providing any motivation or incentive for adding a complexing agent to serve to bond a polyvinylamine to cellulosic material in order to improve the acid receptivity of acid dyes of textile material.

As described above, one skilled in the art looking to improve dye receptivity would not be motivated to look to the paper strength agents disclosed in Geer for somehow incorporating a complexing agent as defined in the currently pending claims into the process disclosed in Schrell. Again, the polyamines disclosed in Schrell are added to a spinning solution during the formation of fibers. Any motivation to combine the polyamines disclosed in Schrell with the anionic polymers disclosed in Geer would improperly come from Appellants' own disclosure.

**IV. The cited references, either alone or in any combination, fail to disclose or suggest bonding polyvinylamine to cellulosic material using a complexing agent.**

Appellants submit the even if the above-cited references were somehow combined, even though no motivation for such a combination exists, certain limitations of the claims of the present invention would still be lacking. For example, claim 16 requires that the complexing agent serves to bond the polyvinylamine to the cellulosic material. Nowhere does Schrell or Evani, either alone or in combination, teach or suggest this limitation.

In Schrell, the polymeric amine compound becomes incorporated into the regenerated cellulose fibers by being added during the formation of the fibers. However, Schrell does not teach bonding the polymeric amine compound to the cellulose fibers. In stark contrast, independent claim 16 requires that the complexing agent serve to bond the polyvinylamine to the cellulosic material.

As stated above, neither Evani nor Geer disclose bonding the polyvinylamine to the cellulosic material to improve acid dye receptivity. Thus, the references cannot be interpreted to disclose that a complexing agent serves to bond the polyvinylamine to the

cellulosic material. As such, it is believed that the claims patentably define over both references.

**V. Claims 24-25 are patentable over Schrell in view of Evani and in further view of JP '593 because no motivation or suggestion exists to further combine JP '593 to the combined teachings of Schrell and either Evani or Geer.**

Appellants submit the even if Schrell and Evani were somehow combined, even though no motivation for such a combination exists, no further motivation or suggestion exists to combine the above references with JP '593. Thus, even if the references can be combined, Appellants submit that claims 24 and 25 are still patentably distinct.

Claim 24 is dependent on claim 23, which in turn depends on independent claim 16.

The additional limitations required by claim 24 (including the limitation of claim 23) is that the textile material be a fabric and that the cellulosic material comprise cellulosic fibers. Also, according to claim 24, the textile material contains the cellulosic fibers in combination with nitrogen containing natural or synthetic fibers. Claim 25 is dependent on claim 24 and further requires that the nitrogen containing natural or synthetic fibers comprise wool fibers or polyamide fibers.

JP '593 was cited in the Office Action for teaching incorporating polyamide fibers into cellulosic fibrous materials in order to enhance the strength of the cellulosic material. The Final Office Action states that one of ordinary skill in the art would have been motivated to incorporate the polyamide fibers by the expectation that the fibers would further enhance the strength of the cellulosic fibrous material.

As stated above, Schrell expressly teaches away from treating the cellulose fiber textiles before dyeing. As such, no further motivation or incentive exists in JP '593 to

modify the teachings of Schrell by incorporating polyamide fibers of JP '593, and a compound from either Evani or Geer, into the cellulosic slurry of Schrell. As such, Appellants respectfully submit that one of ordinary skill in the art would not be motivated to look to JP '593 for the limitations of claims 24 and 25.

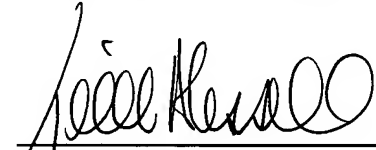
**8. CONCLUSION:**

It is respectfully submitted that the claims are patentably distinct over the prior art of record and that the present application is in complete condition for allowance. As such, Appellants respectfully request issuance of the patent.

Respectfully submitted,

DORITY & MANNING,  
ATTORNEYS AT LAW, P.A.

3/1/05  
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Date

  
\_\_\_\_\_  
Timothy A. Cassidy  
Registration No. 38,024  
Customer ID No.: 22827

Telephone: (864) 271-1592  
Facsimile: (864) 233-7342

## **CLAIMS APPENDIX A**

In accordance with 37 C.F.R. §1.121, the claim listing below includes the status and text of all claims.

1 – 15 (Cancelled)

16. (Original) A dyed textile material comprising:  
a textile material containing a cellulosic material, said cellulosic material being treated with a polyvinylamine and a complexing agent, the complexing agent serving to bond the polyvinylamine to the cellulosic material; and  
an acid dye applied to said cellulosic material.

17. (Original) A dyed textile material as defined in claim 16, further comprising an anionic polysiloxane, said anionic polysiloxane being bonded to said polyvinylamine.

18. (Original) A dyed textile material as defined in claim 16, wherein the complexing agent comprises a polymeric anionic reactive compound.

19. (Original) A dyed textile material as defined in claim 16, wherein the complexing agent comprises a polymeric aldehyde functional compound.

20. (Original) A dyed textile material as defined in claim 16, wherein the polyvinylamine comprises a partially hydrolyzed polyvinylformamide.

21. (Original) A dyed textile material as defined in claim 18, wherein the complexing agent comprises a polymer of a maleic anhydride or a maleic acid.

22. (Original) A dyed textile material as defined in claim 16, wherein the cellulosic material contains from about 0.5% to about 10% by weight polyvinylamine.

23. (Original) A dyed textile material as defined in claim 16, wherein the textile material is a fabric.

24. (Original) A dyed textile material as defined in claim 23, wherein the cellulosic material comprises cellulosic fibers, the textile material containing the cellulosic fibers in combination with nitrogen containing natural or synthetic fibers.

25. (Original) A dyed textile material as defined in claim 24, wherein the nitrogen containing natural or synthetic fibers comprise wool fibers or polyamide fibers.

26. (Original) A dyed textile material as defined claim 16, wherein the acid dye is an acid mordant dye.

27. (Original) A dyed textile material as defined in claim 26, wherein the mordant dye is a chrome mordant dye.

28. (Original) A dyed textile material as defined in claim 16, wherein the textile material is a yarn.

29. (Withdrawn) A dyed textile material as defined in claim 16, wherein the cellulosic material comprises cotton fibers.

30. (Withdrawn) A dyed textile material as defined in claim 16, wherein the cellulosic material comprises pulp fibers.

31. (Withdrawn) A dyed textile material as defined in claim 16, wherein the cellulosic material comprises rayon fibers.

32. (Original) A dyed textile material as defined in claim 16, wherein the textile material is a fabric and wherein the polyvinylamine is applied to the fabric according to a particular pattern.